

CO-PROCESSING

OF

Alternative Fuels & Raw Materials

AT

ULTRATECH CEMENT

ADITYA BIRLA

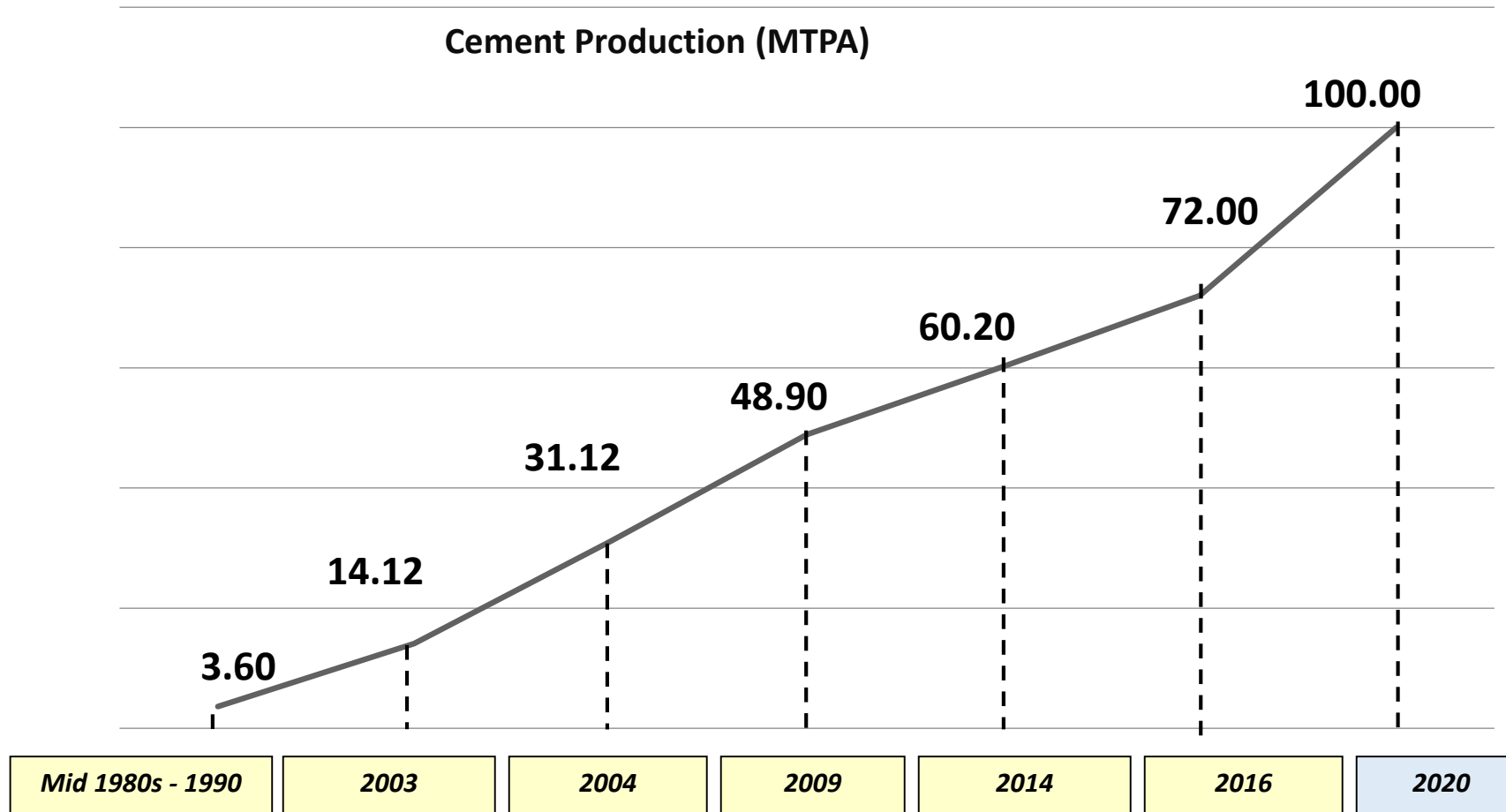


UltraTech

A Brief Snapshot

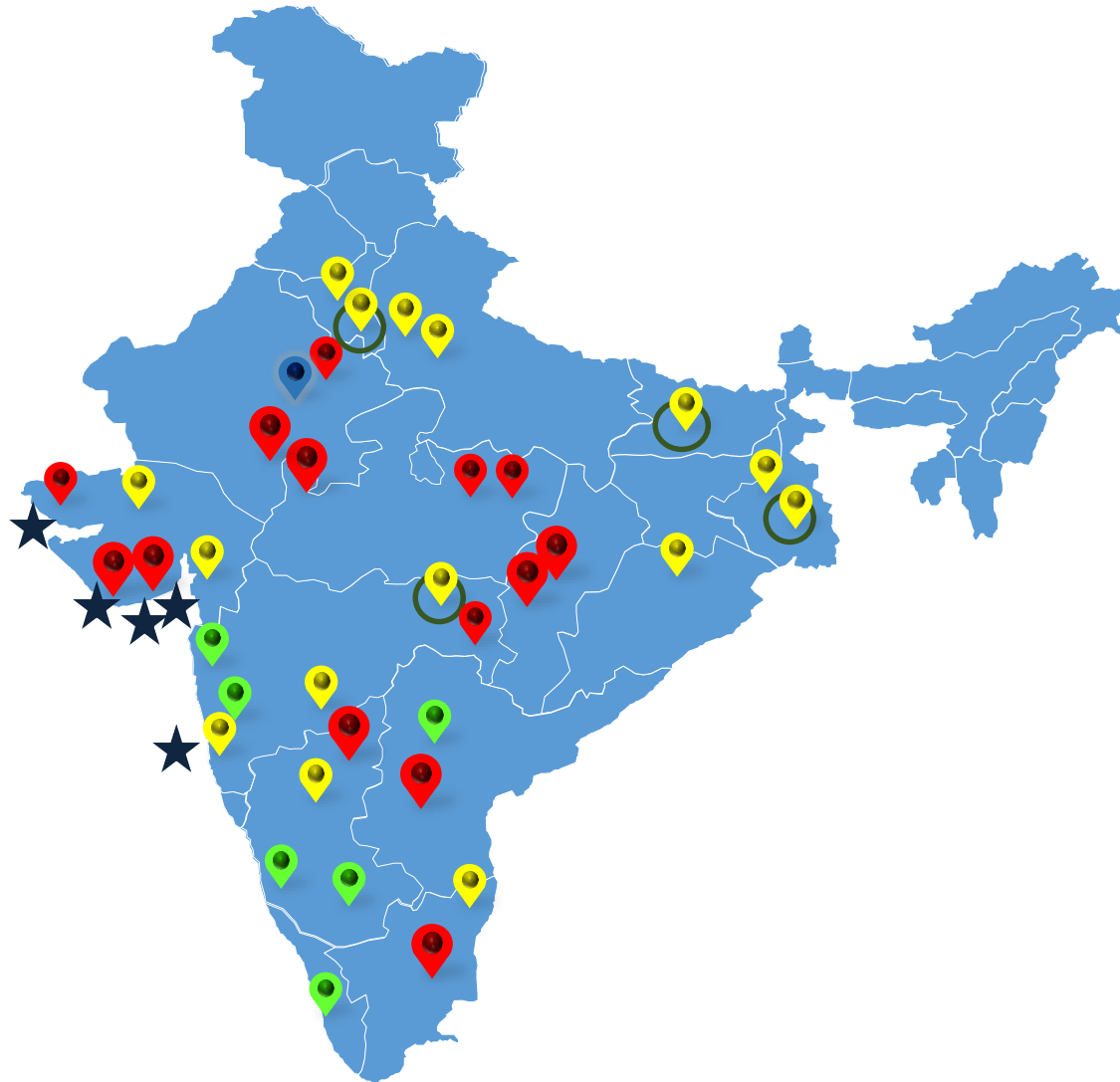
- **Aditya Birla Group's Cement** Business journey started in the year **1983**
- Currently largest manufacturer of Grey Cement, White Cement and Ready-Mix Concrete (RMC) in India
- Globally ranks **4th as largest manufacturer** of Cement (excluding China)
- Operations in 5 countries – **India, UAE, Bahrain, Bangladesh & Sri Lanka**
- 12 Integrated Plants, 12 Grinding Units & 6 Bulk Terminals for Grey Cement in India
- **UTCL's installed capacity for production of Grey Cement in India stands at 63 Million TPA**

The Growth Story . . .





Pan – India presence



Type of Unit		No.
Integrated Plants		12 + 2**
Grinding Units		12 + 4*
Bulk Terminals		6
MSW Pre- Processing unit		1
Jetties		5



International Presence



2004

2010

Acquired Bulk Terminal at Sri Lanka from L&T

Capacity : 3.20 Mio T

- Acquisition of Star Cement
- Presence in UAE, Bahrain & Bangladesh



Ras Al Khaimah (Clinker), UAE

Location	Mio T
Integrated Plants	
Ras-Al-Khaimah , UAE (7500 TPD)	No grinding
Grinding Units	
Abu Dhabi, UAE	1.30
Ajman, UAE	1.20
Bahrain	0.40 *
Bangladesh	0.50
Total Capacity	3.20

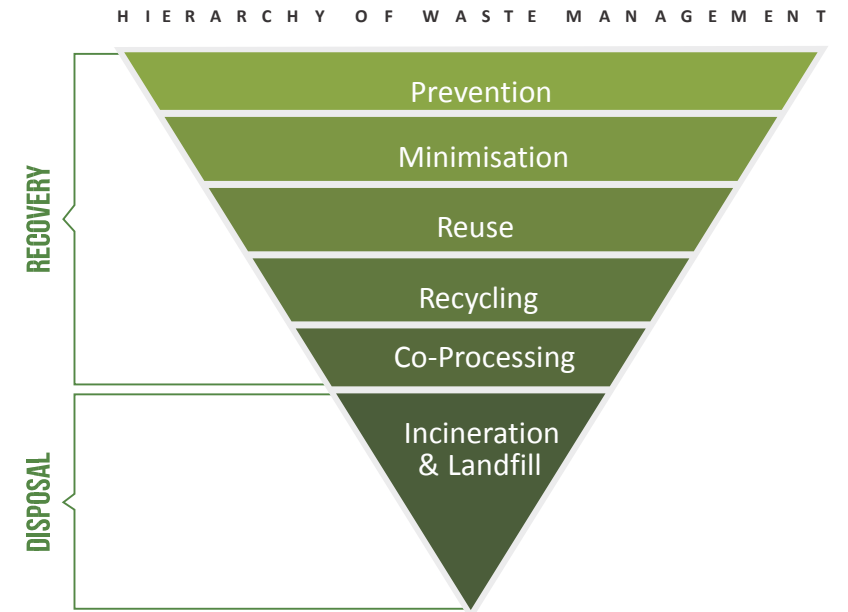
*** 0.60 Mio T expansion project is currently under progress, expected to be completed in 2016**

What is Co Processing ?

The use of waste materials in RII's (Resources Intensives Industrial processes) such as cement, lime, steel, glasses, power generation etc., instead of fossil fuels & natural resources.

Co-processing benefits to:

- Upgrades waste management within the waste hierarchy
- Reduces wastes health & environmental impacts
- Maintains and improves the industrial sector's competitiveness
- Decreases (largely) the costs of waste management
- Improves all human and technical-economical factors



Why Cement Kilns are suitable for disposing wastes ?

- High flame temperature – ensures complete destruction of harmful pollutants.
- Residence time of combustion gases above 1000°C in excess of 3-4 seconds – ensures complete destruction of pollutants.
- Complete scrubbing of exhaust gas due to countercurrent flow of raw material resulting in trapping of heavy metals, sulphur and other pollutants within clinker.

Why Cement Kilns are suitable for disposing wastes ?

- Inclusion of ashes and residual metals from the wastes within the clinker crystal structure.
- Kiln lines equipped with ESPs/Bag filters – ensures negligible particulate emission.
- Intense contact between solid and gas phases – ensures condensation of volatiles, absorbs SO₂ and neutralize acid gases.

Regulatory framework for co-processing

Hazardous And Other Wastes

(Management, Handling and Transboundary Movement) Rules, 2016.

Utilization of hazardous wastes.-

The utilisation of hazardous wastes as a supplementary resource or for energy recovery, or after processing shall be carried out by the units only after obtaining approval from the State Pollution Control Board in respect of waste on the basis of Standard Operating Procedures or Guidelines provided by the CPCB.

Acceptance Criteria

Permission

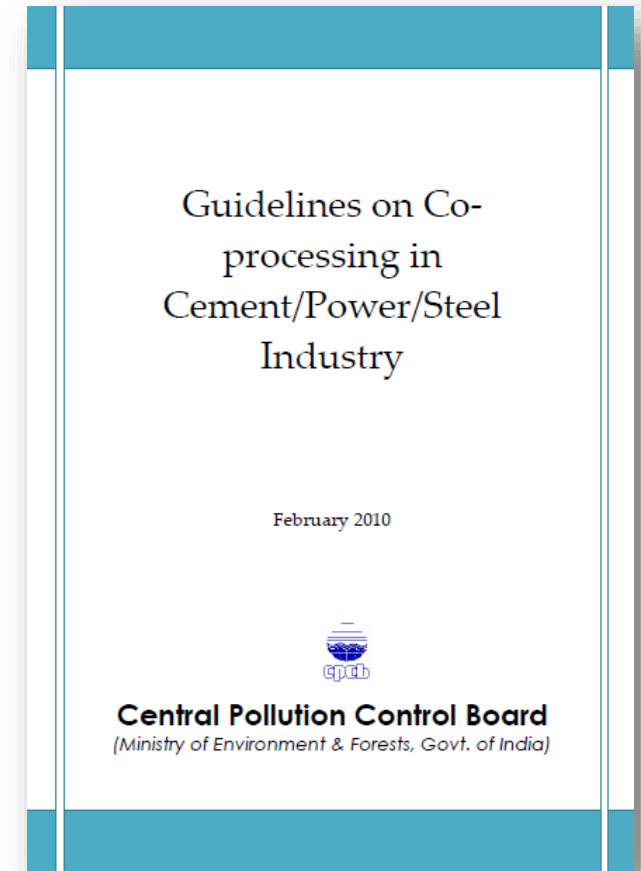
Trial Run

Emission Standards

Potential Waste List

Guidelines on Co-Processing

Published by Central Pollution Control Board in February 2010



Physical State of Wastes

Physical State



Solid



Liquid



Semi Solid

Size



Any size from Big pieces to fine powder

Moisture, Sulfur and Chloride content are evaluated on case to case basis for suitability.

Wastes for Cement Industry



Agro – Waste

DORB
Cashew Nut Shells
Coir Pith
Palm Seed



Municipal Solid Waste/ Refuse Derived Fuel/ Plastic

- RDF generation from MSW plants.



Industrial Wastes

Automobile
Pharmaceutical
Agriculture
Textile

Industrial Wastes We Can Co-Process

Automobile Industry	Textile Industry	Pharmaceutical Industries	Soft Drink Industry
<ul style="list-style-type: none"> • Paint Sludge • Phosphate Sludge • ETP Sludge • Grinding Dust • Oily rags 	<ul style="list-style-type: none"> • ETP Sludge 	<ul style="list-style-type: none"> • Spent Carbon • Spent Solvent • Mother Liquor • Process Waste • Distillation Residue • Expired Drugs/ Medicine 	<ul style="list-style-type: none"> • ETP Sludge • Spent Carbon • WTP Sludge

•Petroleum Refinery	•Pesticide Industry	•Footwear, Furnishings, FMCG etc
<ul style="list-style-type: none"> • Oil Sludge • Spent Catalyst 	<ul style="list-style-type: none"> • ETP Sludge • Still Bottom Residue • Aqueous Mother Liquor • Spent Solvent • Date-expired/ Banned Pesticide 	<ul style="list-style-type: none"> • Incinerable scrap • Expired/Out-of-specs products • Process Wastes • Plastics

List of Banned Wastes

- **Asbestos containing waste**
- **Bio-hazardous waste**
- **Electronic scrap**
- **Entire batteries**
- **Explosives**
- **Corrosives**
- **Mineral acids**
- **Radioactive waste**
- **Unsorted municipal solid waste**

Storage Yard & Feeding System

- A well covered storage yard with good ventilation, concrete floor and leachate collection drainage system.
- A special and fully mechanized feeding system with hopper, belt conveyor, weigh feeder etc.
- Shredding and AFR mixing facility
- Special manpower for pre-processing, handling and monitoring of waste fuel feeding.
- Fully dedicated handling vehicle like dozer.
- Pump for feeding liquid/semi solid material like sludge.



Waste Material for Shredding



Liquid Waste Feeding System



AFR – Laboratory

AFR – Laboratory is equipped with sophisticated equipments for analysis of Hazardous Waste

Instruments

Gas Chromatography
ICP – OES
CHNS –O analyser
Bomb Calorimeter
TGA analyser
Microwave digestion system
Karl Fisher Titrator
Ion Meter,

Parameters

Proximate and Ultimate Analysis
TOC and VOC
Inorganic Oxides
Flash Point
Heavy Metals
Halogen
Calorific Value and
Other relevant parameters



Safety First is our goal

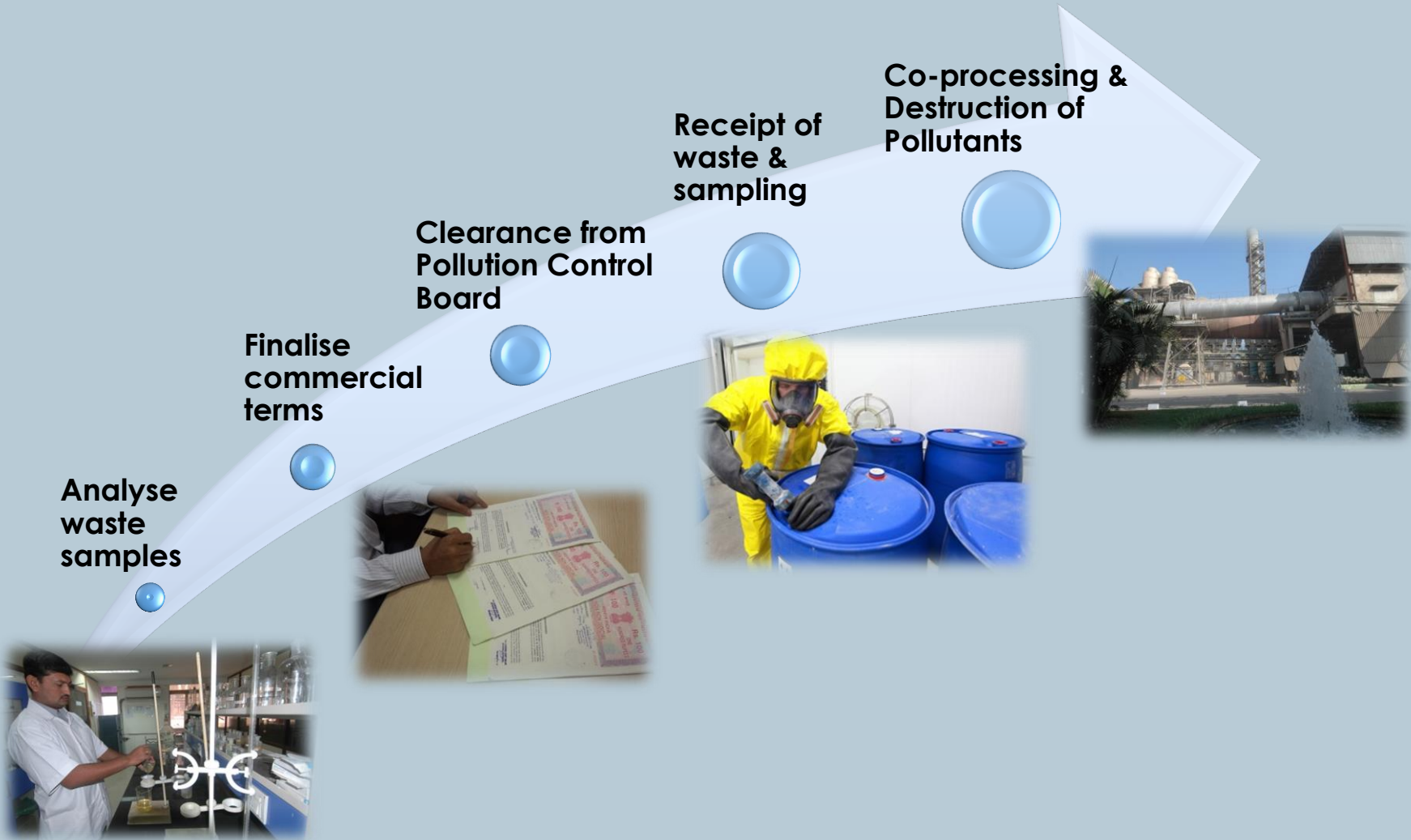


Safety measures are in place for the health of everybody.

Strict procedures are followed during handling of waste materials.



Process to be followed



We provide certificate of destruction of waste.



In case of any Query, contact:

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